

PATENT COOPERATION TREATY

DIARIEDFrom the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

ID 186163

To:

GRIFFITH HACK
GPO Box 1285K
MELBOURNE VIC 3001

GRIFFITH HACK

29 MAR 2001

1
2
3**PCT**

WRITTEN OPINION

(PCT Rule 66)

Date of mailing
(day/month/year)

28 MAR 2001

Applicant's or agent's file reference
fp13138

REPLY DUE

within **TWO MONTHS**
from the above date of mailing

International Application No.

PCT/AU00/00878

International Filing Date (day/month/year)

21 July 2000

Priority Date (day/month/year)

21 July 1999

International Patent Classification (IPC) or both national classification and IPC

Int. Cl. ⁷ C05F 5/00

Applicant

CARLTON AND UNITED BREWERIES LIMITED et al

1. This written opinion is the **first** drawn by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: **21 November 2001**

Name and mailing address of the IPEA/AU

AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaaustralia.gov.au
Facsimile No. (02) 6285 3929

Authorized Officer

GAVIN THOMPSON

Telephone No. (02) 6283 2240

I. Basis of the opinion**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed.
- ☐ the description, pages , as originally filed,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the claims, pages , as originally filed,
 pages , as amended under Article 19,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the drawings, pages , as originally filed,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the sequence listing part of the description:
 pages , as originally filed
 pages , filed with the demand
 pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

5. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

** Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
 US Department of Commerce
 United States Patent and Trademark
 Office, PCT
 2011 South Clark Place Room
 CP2/5C24
 Arlington, VA 22202
 ETATS-UNIS D'AMERIQUE
 in its capacity as elected Office

| | |
|--|--|
| Date of mailing (day/month/year) 15 March 2001 (15.03.01) | |
| International application No. PCT/AU00/00878 | Applicant's or agent's file reference FP13138 |
| International filing date (day/month/year) 21 July 2000 (21.07.00) | Priority date (day/month/year) 21 July 1999 (21.07.99) |
| Applicant ROGERS, Peter, John et al | |

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
 16 February 2001 (16.02.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

| | |
|--|--|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35 | Authorized officer C. Cupello Telephone No.: (41-22) 338.83.38 |
|--|--|

PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

| | | |
|---|---|--|
| Applicant's or agent's file reference fp13138 | FOR FURTHER ACTION | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416). |
| International Application No. PCT/AU00/00878 | International Filing Date (<i>day/month/year</i>) 21 July 2000 | Priority Date (<i>day/month/year</i>) 21 July 1999 |
| International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ C05F 5/00 | | |
| Applicant CARLTON AND UNITED BREWERIES LIMITED et al | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheet(s).

3. This report contains indications relating to the following items:

- | | | |
|------|-------------------------------------|---|
| I | <input checked="" type="checkbox"/> | Basis of the report |
| II | <input type="checkbox"/> | Priority |
| III | <input type="checkbox"/> | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| IV | <input type="checkbox"/> | Lack of unity of invention |
| V | <input checked="" type="checkbox"/> | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| VI | <input type="checkbox"/> | Certain documents cited |
| VII | <input type="checkbox"/> | Certain defects in the international application |
| VIII | <input type="checkbox"/> | Certain observations on the international application |

| | |
|---|--|
| Date of submission of the demand 16 February 2001 | Date of completion of the report 7 November 2001 - 9 NOV 2001 |
| Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929 | Authorized Officer DAVID GRIFFITHS Telephone No. (02) 6283 2628 |

I. Basis of the report**1. With regard to the elements of the international application:***

- ☐ the international application as originally filed.
- ☒ the description, pages **1 - 60**, as originally filed,
pages , filed with the demand,
pages , received on with the letter of
- ☒ the claims, pages , as originally filed,
pages , as amended (together with any statement) under Article 19,
pages , filed with the demand,
pages **61 - 63**, received on **26 October 2001** with the letter of **26 October 2001**
- ☒ the drawings, pages **1/22 - 22/22**, as originally filed,
pages , filed with the demand,
pages , received on with the letter of
- ☐ the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

| | | |
|-------------------------------|---------------|-----|
| Novelty (N) | Claims 1 - 19 | YES |
| | Claims | NO |
| Inventive step (IS) | Claims 1 - 19 | YES |
| | Claims | NO |
| Industrial applicability (IA) | Claims 1 - 19 | YES |
| | Claims | NO |

2. Citations and explanations (Rule 70.7)

The present invention relates to fertiliser compositions comprising malt extract or spent grain liquor wherein the compositions do not contain lime. Methods of improving plant growth, improving soil condition, or preventing or inhibiting fungal growth comprising applying such compositions to soil are also disclosed and claimed. Malt extract or spent grain liquor are wastes from the pre-fermentation stage of the brewing process.

The following documents will be referred to in this report

- D1: Derwent Abstract No. 26928X/15
- D2: Derwent Abstract No. 49248Y/28
- D3: Derwent Abstract No. 66345A/37
- D4: Derwent Abstract No. 025578B/02
- D5: Patent Abstracts of Japan, JP 60-041593
- D6: Patent Abstracts of Japan, JP 63-166496
- D7: Patent Abstracts of Japan, JP 2-022191
- D8: Patent Abstracts of Japan, JP 5-163089
- D9: Patent Abstracts of Japan, JP 6-316478
- D10: Patent Abstracts of Japan, JP 7-087952
- D11: DE 4424574
- D12: Patent Abstracts of Japan, JP 8-026869
- D13: AU 12453/28
- D14: AU 159/66

D1 discloses a fertiliser comprising waste liquor from whisky (malted barley or other cereal) fermentation. The waste liquor is a post-fermentation waste and hence can be used to distinguish the present invention. The exemplified fertiliser also contains lime superphosphate. Similarly D2 and D3 disclose fertilisers derived from fermentation waste liquor (*i.e.* post-fermentation waste) and the addition of calcium oxide, hydroxide or carbonate.

D4 discloses a fertiliser containing the dregs of hops. The citation is silent on the use of malt extract or spent grain liquor.

D5, D6, D9 and D10 discloses fertilisers derived from waste liquor of shochu (low-class distilled spirits). The liquor of D6 is distillation waste and so clearly distinguishable from the present application. It is not clear from the other citations what stage the liquor is obtained at but it appears probable that they are post-fermentation wastes.

D7 discloses a fertiliser made from post-fermentation beer refuse comprising malt residue.

Continued on supplemental sheet.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of

D8 discloses a fertiliser derived from many sources by thermophilic fermentation. The sources include "brewing wastes" in general, but the citation is silent about what source of the waste and the stage of the brewing process it obtained from.

D11 discloses a fertiliser containing at least 50 per cent malt sprouts and thus is distinguishable from the present invention.

D12 discloses a fertiliser derived from beer lees and hence from a post-fermentation product.

D13 discloses a fertiliser derived from distillery waste phosphatic rock and sulphuric acid. There is no mention of malt extract or spent grain liquor as the starting material.

D14 discloses a fertiliser prepared from spent liquors, particularly alcoholic fermentation spent liquor, but is silent about the use of pre-fermentation waste from the brewing process.

In their correspondence the applicants stress the importance of malt extract and spent grain liquor being wastes from the *pre-fermentation* stage of the brewing process. This results in the fertiliser containing beneficial ingredients such as bacteria and hormones which are not present in the prior art process, either because harsher treatments and conditions have destroyed them, or because they use different starting materials. On this basis it is possible to acknowledge the present claims as being novel and inventive.

The present claims meet the criterion of industrial applicability because they relate to fertilisers and their use.

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|----------------------------|-----|
| Novelty (N) | Claims 12, 13, 17 | YES |
| | Claims 1-11, 14-16, 18, 19 | NO |
| Inventive step (IS) | Claims 12, 13 | YES |
| | Claims 1-11, 14-19 | NO |
| Industrial applicability (IA) | Claims 1-19 | YES |
| | Claims | NO |

2. Citations and explanations

- D1: Derwent Abstract Accession No. 26928X/15, JP 51-022577 A (KANEGAFUCHI CHEM KK) ✕
- D2: Derwent Abstract Accession No. 49248Y/28, JP 52-065074 A (AJINOMOTO KK and CHUO KASEI) ✕
- D3: Derwent Abstract Accession No. 66345A/37, JP 53-092257 A (TAKEDA CHEMICAL IND KK) ✕ D5
- D4: Derwent Abstract Accession No. 025578B/02, JP 53-134628 A (SHOKUJU NOEN KK) ✕
- D5: Patent Abstracts of Japan, JP 60-041593 A (NIHON KAIHATSU CONSULTANT KK) ✕
- D6: Patent Abstracts of Japan, JP 63-166496 A (DAIICHI KAIHATSU KK) ✕
- D7: Patent Abstracts of Japan, JP 2-022191 A (MIRIACHI K) ✕
- D8: Patent Abstracts of Japan, JP 5-163089 A (ENZA KK) ✕
- D9: Patent Abstracts of Japan, JP 6-316478 A (TOSHIKI ARANAKA)
- D10: Patent Abstracts of Japan, JP 7-087952 A (FUKUTOKUCHIYOU SHIYURUI KK) ✕
- D11: DE 4424574 A (FRIEDRICH WEISSHEIMER MALZFABRIK)
- D12: Patent Abstracts of Japan, JP 8-026869 A (JAPAN STEEL WORKS LTD)
- D13: AU 12453/28 A (HENRY HERSCHEL BASS)
- D14: AU 159/66 A (KYOWA HAKKO KOGYO KK)

NOVELTY (N) Claims 1 to 11

D1 discloses a fertiliser comprising waste liquor from whisky (malted barley or other cereal) fermentation. D2 and D3 disclose fertilisers derived from fermentation waste liquor, i.e. liquor after fermentable sugars have been removed. Compare with instant page 13 lines 27 to 30. D4 discloses a fertiliser containing the dregs of

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of V

hops which is derived from beer brewing. (In which the malted grain is contacted by hot water to produce wort which is boiled with hops, filtered and fermented with yeast.) D5, D6, D9 and D10 discloses a fertiliser derived from waste liquor of shochu (low-class distilled spirits). D7 discloses a fertiliser made from post-fermentation beer refuse comprising malt residue. D8 discloses a fertiliser derived from many sources including brewing wastes. D11 discloses a fertiliser containing at least 50 per cent of waste from malting brewed cereals. D12 discloses a fertiliser derived from beer lees. D13 discloses a fertiliser derived from distillery waste (claim 1 and column 1 line 11). D14 discloses a fertiliser prepared from spent liquors, particularly alcoholic fermentation spent liquor (page 4 lines 17 to 21).

INVENTIVE STEP (IS) Claims 1 to 11

As above.

NOVELTY (N) Claim 13

Beer brewing wastes necessarily contain yeast. Fertilisers derived from them would also. See D2 to D4, D7, D8, D11, D12 and D14.

INVENTIVE STEP (IS) Claim 13

As above.

NOVELTY (N) Claims 14 to 16, 18, 19

The citations D1 to D14 disclose anticipating fertilisers. Fertilisers by definition are used to improve plant growth and soil condition, and ameliorate undesirable growth.

INVENTIVE STEP (IS) Claims 14 to 16, 18, 19

As above.

INVENTIVE STEP (IS) Claim 17

It would be obvious to a skilled person in the art to apply anticipating fertilisers by traditional spraying or mechanical spreading. See D1 to D14.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU00/00878

A. CLASSIFICATION OF SUBJECT MATTERInt. Cl. ⁷: C05F 5/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7: C05F 5/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Chemical Abstracts, WPIDS (keywords: spent(w)grain, dregs, dross, marc, yeast(w)extract, brewers(w)yeas, fertili)**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| X | Derwent Abstract Accession No. 26928X/15, Class C04, JP 51-022577 A (KANEGAFUCHI CHEM KK) 23 March 1976 See the abstract | 1 to 10, 14 to 19 |
| X | Derwent Abstract Accession No. 49248Y/28, Class C04, JP 52-065074 A (AJINOMOTO KK and CHUO KASEI KK) 30 May 1977 See the abstract | 1 to 10, 14 to 19 |
| X | Derwent Abstract Accession No. 66345A/37, Class C04, JP 53-092257 A (TAKEDA CHEMICAL IND KK) 12 August 1978 See the abstract | 1 to 10, 14 to 19 |

☒ Further documents are listed in the continuation of Box C
 ☒ See patent family annex

| | |
|---|--|
| * Special categories of cited documents: | |
| "A" document defining the general state of the art which is not considered to be of particular relevance | "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention |
| "E" earlier application or patent but published on or after the international filing date | "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone |
| "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| "O" document referring to an oral disclosure, use, exhibition or other means | "&" document member of the same patent family |
| "P" document published prior to the international filing date but later than the priority date claimed | |

Date of the actual completion of the international search
4 September 2000

Date of mailing of the international search report

1-8 SEP 2000

Name and mailing address of the ISA/AU

 AUSTRALIAN PATENT OFFICE
 PO BOX 200, WODEN ACT 2606, AUSTRALIA
 E-mail address: pct@ipaustalia.gov.au
 Facsimile No. (02) 6285 3929

Authorized officer

 GAVIN THOMPSON
 Telephone No : (02) 6283 2240

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU00/00878

| C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|---|---|-----------------------|
| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X | Derwent Abstract Accession No. 025578B/02, Class C03, JP 53-134628 A (SHOKUJU NOEN KK) 24 November 1978 See the abstract | 1 -10, 14 -19 |
| X | Patent Abstracts of Japan, JP 60-041593 A (NIHON KAIHATSU CONSULTANT KK) 5 March 1985 See the abstract | 1 -11, 14 -19 |
| X | Patent Abstracts of Japan, JP 63-166496 A (DAIICHI KAIHATSU KK) 9 July 1988 See the abstract | 1 - 10, 14 -19 |
| X | Patent Abstracts of Japan, JP 2-022191 A (MORIAKI K) 25 January 1990 See the abstract | 1 -11, 14-19 |
| X | Patent Abstract of Japan, JP 5-163089 A (ENZA KK) 29 June 1993 See the abstract | 1 -11, 14 -19 |
| X | Patent Abstracts of Japan, JP 6-316478 A (TOSHIKI ARANAKA) 15 November 1994 See the abstract | 1 -11, 14 -19 |
| X | Patent Abstracts of Japan, JP 7-087952 A (FUKUTOKUCHIYOU SHIYURUI KK) 4 April 1995 See the abstract | 1 -11, 14 -19 |
| X | DE 4424574 A (FRIEDRICH WEISSHEIMER MALZFABRIK) 10 August 1995 See the description | 1 -10, 14 -19 |
| X | Patent Abstracts of Japan, JP 8-026869 A (JAPAN STEEL WORKS LTD) 30 January 1996 See the abstract | 1 -11, 14 -19 |
| X | AU 12453/28 A (HENRY HERSCHEL BASS) 23 March 1928 See page 1 lines 9 to 13, and claim 1 | 1 -10, 14 -19 |
| X | AU 159/66 A (KYOWA HAKKO KOGYO KK) 6 July 1967 See page 4 lines 17 to 21, and claim 1 | 1 -10, 14 -19 |

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/AU00/00878

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search
Report

Patent Family Member

ALL CITATIONS POSSESS NO FAMILY MEMBERS.

END OF ANNEX

The demand must be filed directly with the competent International Preliminary Examining Authority or, if two or more Authorities are competent, with the one chosen by the applicant. The name or two-letter code of that Authority may be indicated by the applicant on the line below:

IPEA/ _____

PCT

CHAPTER II

DEMAND

under Article 31 of the Patent Cooperation Treaty:

The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty and hereby elects all eligible States (except where otherwise indicated).

| | | |
|---|--|---|
| For International Preliminary Examining Authority use only | | |
| Identification of IPEA | | Date of receipt of DEMAND |
| Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION | | Applicant's or agent's file reference FP13138 |
| International application No. PCT/AU00/00878 | International filing date (day/month/year) 21 July 2000 | (Earliest) Priority date (day/month/year) 21 July 1999 |
| Title of invention SOIL CONDITIONER, FERTILIZER AND FUNGICIDE COMPOSITIONS | | |
| Box No. II APPLICANT(S) | | |
| Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) CARLTON AND UNITED BREWERIES LIMITED 77 Southbank Boulevard Melbourne, Victoria 3006 Australia | | Telephone No.: |
| | | Facsimile No.: |
| | | Teleprinter No.: |
| State (that is, country) of nationality: Australia | State (that is, country) of residence: Australia | |
| Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) ROGERS, Peter John 17 Freyer Street Williamstown, Victoria 3016 Australia | | |
| State (that is, country) of nationality: Australia | State (that is, country) of residence: Australia | |
| Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) GILBERT, Robert White 14 Hope Place Laverton, Victoria 3028 Australia | | |
| State (that is, country) of nationality: Great Britain | State (that is, country) of residence: Australia | |
| <input checked="" type="checkbox"/> Further applicants are indicated on a continuation sheet. | | |

Continuation of Box No. II APPLICANT(S)

If none of the following sub-boxes is used, this sheet should not be included in the demand.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

PECAR, Michael Andrew
25/3 McIntosh Court
Aspendale Gardens, Victoria 3195
Australia

State (that is, country) of nationality:

Australia

State (that is, country) of residence:

Australia

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (that is, country) of nationality:

State (that is, country) of residence:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (that is, country) of nationality:

State (that is, country) of residence:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (that is, country) of nationality:

State (that is, country) of residence:

☐

Further applicants are indicated on another continuation sheet.

Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCEThe following person is ☒ agent ☐ common representativeand ☒ has been appointed earlier and represents the applicant(s) also for international preliminary examination.☐ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*GRIFFITH HACK
Level 3
509 St Kilda Road
Melbourne, Victoria 3004
Australia

Telephone No.:

+61 3 9243 8300

Facsimile No.:

+61 3 9243 8333

Teleprinter No.:

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.**Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION**

Statement concerning amendments:*

1. The applicant wishes the international preliminary examination to start on the basis of:

☒ the international application as originally filedthe description ☐ as originally filed☐ as amended under Article 34the claims ☐ as originally filed☐ as amended under Article 19 (together with any accompanying statement)☐ as amended under Article 34the drawings ☐ as originally filed☐ as amended under Article 342. ☐ The applicant wishes any amendment to the claims under Article 19 to be considered as reversed.3. ☐ The applicant wishes the start of the international preliminary examination to be postponed until the expiration of 20 months from the priority date unless the International Preliminary Examining Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). *(This check-box may be marked only where the time limit under Article 19 has not yet expired.)*

* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Language for the purposes of international preliminary examination: ENGLISH

☒ which is the language in which the international application was filed.☐ which is the language of a translation furnished for the purposes of international search.☐ which is the language of publication of the international application.☐ which is the language of the translation (to be) furnished for the purposes of international preliminary examination.**Box No. V ELECTION OF STATES**The applicant hereby elects all eligible States *(that is, all States which have been designated and which are bound by Chapter II of the PCT)*

excluding the following States which the applicant wishes not to elect:

Box No. VI CHECK LIST

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

- | | | |
|--|---|--------|
| 1. translation of international application | : | sheets |
| 2. amendments under Article 34 | : | sheets |
| 3. copy (or, where required, translation) of amendments under Article 19 | : | sheets |
| 4. copy (or, where required, translation) of statement under Article 19 | : | sheets |
| 5. letter | : | sheets |
| 6. other (specify) | : | sheets |

For International Preliminary
Examining Authority use only

| received | not received |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |


The demand is also accompanied by the item(s) marked below:

- | | |
|--|---|
| 1. <input type="checkbox"/> fee calculation sheet | 4. <input type="checkbox"/> statement explaining lack of signature |
| 2. <input type="checkbox"/> separate signed power of attorney | 5. <input type="checkbox"/> nucleotide and or amino acid sequence listing in computer readable form |
| 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: | 6. <input type="checkbox"/> other (specify): |

Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).

CARLTON AND UNITED BREWERIES LIMITED



 VIVIEN SANTER, Patent Attorney
 for and on behalf of the applicant

For International Preliminary Examining Authority use only

- Date of actual receipt of DEMAND:
- Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):
- ☐ The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply.
 ☐ The applicant has been informed accordingly.
- ☐ The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5.
- ☐ Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82.

For International Bureau use only

Demand received from IPEA on:

PCT REQUEST

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| | | |
|---------|---|---|
| 0 | For receiving Office use only | |
| 0-1 | International Application No. | |
| 0-2 | International Filing Date | |
| 0-3 | Name of receiving Office and "PCT International Application" | |
| 0-4 | Form - PCT/RO/101 PCT Request Prepared using | PCT-EASY Version 2.91 (updated 01.07.2000) |
| 0-5 | Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty | |
| 0-6 | Receiving Office (specified by the applicant) | Australian Patent Office (RO/AU) |
| 0-7 | Applicant's or agent's file reference | FP13138 |
| I | Title of invention | SOIL CONDITIONER, FERTILIZER AND FUNGICIDE COMPOSITIONS |
| II | Applicant | applicant only |
| II-1 | This person is: | all designated States except US |
| II-2 | Applicant for | CARLTON AND UNITED BREWERIES LIMITED |
| II-4 | Name | 77 Southbank Boulevard |
| II-5 | Address: | MELBOURNE, Victoria 3006 |
| | | Australia |
| II-6 | State of nationality | AU |
| II-7 | State of residence | AU |
| III-1 | Applicant and/or inventor | applicant and inventor |
| III-1-1 | This person is: | US only |
| III-1-2 | Applicant for | ROGERS, Peter, John |
| III-1-4 | Name (LAST, First) | 17 Freyer Street |
| III-1-5 | Address: | WILLIAMSTOWN, Victoria 3016 |
| | | Australia |
| III-1-6 | State of nationality | AU |
| III-1-7 | State of residence | AU |

| | | |
|---------|---|--|
| III-2 | Applicant and/or Inventor | applicant and inventor US only GILBERT, Robert, White 14 Hope Place LAVERTON, Victoria 3028 Australia |
| III-2-1 | This person is: | |
| III-2-2 | Applicant for | |
| III-2-4 | Name (LAST, First) | |
| III-2-5 | Address: | |
| III-2-6 | State of nationality | GB |
| III-2-7 | State of residence | AU |
| III-3 | Applicant and/or Inventor | applicant and inventor US only PECAR, Michael, Andrew 25/3 McIntosh Court ASPENDALE GARDENS, Victoria 3195 Australia |
| III-3-1 | This person is: | |
| III-3-2 | Applicant for | |
| III-3-4 | Name (LAST, First) | |
| III-3-5 | Address: | |
| III-3-6 | State of nationality | AU |
| III-3-7 | State of residence | AU |
| IV-1 | Agent or common representative; or address for correspondence The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: | agent GRIFFITH HACK Level 3 509 St Kilda Road MELBOURNE, Victoria 3004 Australia +61 3 9243 8300 +61 3 9243 8333 ghmelb@griffithhack.com.au |
| IV-1-1 | Name | |
| IV-1-2 | Address: | |
| IV-1-3 | Telephone No. | |
| IV-1-4 | Facsimile No. | |
| IV-1-5 | e-mail | |
| V | Designation of States | AP: GH GM KE LS MW MZ SD SL SZ TZ UG ZW and any other State which is a Contracting State of the Harare Protocol and of the PCT EA: AM AZ BY KG KZ MD RU TJ TM and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT EP: AT BE CH&LI CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE and any other State which is a Contracting State of the European Patent Convention and of the PCT OA: BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG and any other State which is a member State of OAPI and a Contracting State of the PCT |
| V-1 | Regional Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned) | |

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FP13138

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| | | | |
|---------|--|---|-----------------------------|
| V-2 | National Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned) | AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH&LI CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW | |
| V-5 | Precautionary Designation Statement In addition to the designations made under Items V-1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. | | |
| V-6 | Exclusion(s) from precautionary designations | NONE | |
| VI-1 | Priority claim of earlier national application | | |
| VI-1-1 | Filing date | 21 July 1999 (21.07.1999) | |
| VI-1-2 | Number | PQ1753 | |
| VI-1-3 | Country | AU | |
| VI-2 | Priority document request The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s): | VI-1 | |
| VII-1 | International Searching Authority Chosen | Australian Patent Office (ISA/AU) | |
| VIII | Check list | number of sheets | electronic file(s) attached |
| VIII-1 | Request | 4 | - |
| VIII-2 | Description | 60 | - |
| VIII-3 | Claims | 2 | - |
| VIII-4 | Abstract | 1 | abstract-fp13138.txt |
| VIII-5 | Drawings | 22 | - |
| VIII-7 | TOTAL | 89 | |
| VIII-8 | Accompanying Items | paper document(s) attached | electronic file(s) attached |
| VIII-8 | Fee calculation sheet | ✓ | - |
| VIII-16 | PCT-EASY diskette | - | diskette |
| VIII-18 | Figure of the drawings which should accompany the abstract | 8 | |
| VIII-19 | Language of filing of the international application | English | |

PCT REQUEST

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FP13138

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| | | |
|--------|---------------------------------|--|
| IX-1 | Signature of applicant or agent | <i>Owen J. Malone</i> Owen John Malone |
| IX-1-1 | Name | CARLTON AND UNITED BREWERIES LIMITED |
| IX-2 | Signature of applicant or agent | <i>Peter J. Rogers</i> |
| IX-2-1 | Name (LAST, First) | ROGERS, Peter, John |
| IX-3 | Signature of applicant or agent | <i>R. Gilbert</i> |
| IX-3-1 | Name (LAST, First) | GILBERT, Robert, White |
| IX-4 | Signature of applicant or agent | <i>Michael Pecar</i> |
| IX-4-1 | Name (LAST, First) | PECAR, Michael, Andrew |
| IX-5 | Signature of applicant or agent | |
| IX-5-1 | Name | GRIFFITH HACK |
| IX-5-2 | Name of signatory | Vivien Santer |
| IX-5-3 | Capacity | Principal |

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| | | |
|--------|---|---------------|
| 10-1 | Date of actual receipt of the purported international application | |
| 10-2 | Drawings: | |
| 10-2-1 | Received | |
| 10-2-2 | Not received | |
| 10-3 | Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application | |
| 10-4 | Date of timely receipt of the required corrections under PCT Article 11(2) | |
| 10-5 | International Searching Authority | ISA/AU |
| 10-6 | Transmittal of search copy delayed until search fee is paid | |

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| | | |
|------|--|--|
| 11-1 | Date of receipt of the record copy by the International Bureau | |
|------|--|--|

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU00/00878

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. 7: **C05F 5/00**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7: C05F 5/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Chemical Abstracts, WPIDS (keywords: spent(w)grain, dregs, dross, marc, yeast(w)extract, brewers(w)yeas, fertili)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| X | Derwent Abstract Accession No. 26928X/15, Class C04, JP 51-022577 A (KANEGAFUCHI CHEM KK) 23 March 1976 See the abstract | 1 to 10, 14 to 19 |
| X | Derwent Abstract Accession No. 49248Y/28, Class C04, JP 52-065074 A (AJINOMOTO KK and CHUO KASEI KK) 30 May 1977 See the abstract | 1 to 10, 14 to 19 |
| X | Derwent Abstract Accession No. 66345A/37, Class C04, JP 53-092257 A (TAKEDA CHEMICAL IND KK) 12 August 1978 See the abstract | 1 to 10, 14 to 19 |

☒ Further documents are listed in the continuation of Box C ☒ See patent family annex

| | |
|---|--|
| * Special categories of cited documents: | "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention |
| "A" document defining the general state of the art which is not considered to be of particular relevance | "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone |
| "E" earlier application or patent but published on or after the international filing date | "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | "&" document member of the same patent family |
| "O" document referring to an oral disclosure, use, exhibition or other means | |
| "P" document published prior to the international filing date but later than the priority date claimed | |

Date of the actual completion of the international search

4 September 2000

Date of mailing of the international search report

8 SEP 2000

Name and mailing address of the ISA/AU

AUSTRALIAN PATENT OFFICE
 PO BOX 200, WODEN ACT 2606, AUSTRALIA
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Authorized officer

GAVIN THOMPSON
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INTERNATIONAL SEARCH REPORT

International application No.
 PCT/AU00/00878

C (Continuation)

DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| X | Derwent Abstract Accession No. 025578B/02, Class C03, JP 53-134628 A (SHOKUJU NOEN KK) 24 November 1978 See the abstract | 1-10, 14-19 |
| X | Patent Abstracts of Japan, JP 60-041593 A (NIHON KAIHATSU CONSULTANT KK) 5 March 1985 See the abstract | 1-11, 14-19 |
| X | Patent Abstracts of Japan, JP 63-166496 A (DAIICHI KAIHATSU KK) 9 July 1988 See the abstract | 1-10, 14-19 |
| X | Patent Abstracts of Japan, JP 2-022191 A (MORI AKI K) 25 January 1990 See the abstract | 1-11, 14-19 |
| X | Patent Abstract of Japan, JP 5-163089 A (ENZA KK) 29 June 1993 See the abstract | 1-11, 14-19 |
| X | Patent Abstracts of Japan, JP 6-316478 A (TOSHI AKI ARANAKA) 15 November 1994 See the abstract | 1-11, 14-19 |
| X | Patent Abstracts of Japan, JP 7-087952 A (FUKUTOKUCHIYOU SHIYURUI KK) 4 April 1995 See the abstract | 1-11, 14-19 |
| X | DE 4424574 A (FRIEDRICH WEISSHEIMER MALZFABRIK) 10 August 1995 See the description | 1-10, 14-19 |
| X | Patent Abstracts of Japan, JP 8-026869 A (JAPAN STEEL WORKS LTD) 30 January 1996 See the abstract | 1-11, 14-19 |
| X | AU 12453/28 A (HENRY HERSCHEL BASS) 23 March 1928 See page 1 lines 9 to 13, and claim 1 | 1-10, 14-19 |
| X | AU 159/66 A (KYOWA HAKKO KOGYO KK) 6 July 1967 See page 4 lines 17 to 21, and claim 1 | 1-10, 14-19 |

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/AU00/00878

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search
Report

Patent Family Member

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END OF ANNEX